State and Private Forestry Fact Sheet
Hawaii 2020

Investment in State’s Cooperative Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>FY 2019 Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Forestry and Open Space</td>
<td>$0</td>
</tr>
<tr>
<td>Cooperative Lands - Forest Health Management</td>
<td>$640,000</td>
</tr>
<tr>
<td>Forest Legacy</td>
<td>$52,000</td>
</tr>
<tr>
<td>Forest Stewardship</td>
<td>$106,025</td>
</tr>
<tr>
<td>Landscape Scale Restoration</td>
<td>$342,577</td>
</tr>
<tr>
<td>State Fire Assistance</td>
<td>$400,000</td>
</tr>
<tr>
<td>Urban and Community Forestry</td>
<td>$386,921</td>
</tr>
<tr>
<td>Volunteer Fire Assistance</td>
<td>$50,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,977,523</strong></td>
</tr>
</tbody>
</table>

NOTE: This funding is for all entities within the state, not just the State Forester’s office.

The mission of the Division of Forestry and Wildlife (DOFAW) of the Hawaii Department of Land and Natural Resources (DLNR) is to responsibly manage and protect watersheds, native ecosystems, and cultural resources and provide outdoor recreation and sustainable forest products opportunities, while facilitating partnerships, community involvement, and education. Cooperative forestry programs, administered and implemented through a partnership between the State of Hawaii, U.S. Forest Service, and many other private and government entities help to fulfill DOFAW's mission. DOFAW and its partners work to protect and restore forests to enhance watershed functions, provide habitat for threatened and endangered species, mitigate wildfire threats, and support many other benefits for current and future generations. Additionally, Hawaii's Forest Action Plan (FAP) provides nine priority issues, including: 1) Water Quality and Quantity; 2) Forest Health: Invasive Species, Insects, and Disease; 3) Wildfire; 4) Urban and Community Forestry; 5) Climate Change and Sea Level Rise; 6) Conservation of Native Biodiversity; 7) Hunting, Nature Based Recreation and Tourism; 8) Forest Products and Carbon Sequestration; and 9) U.S. Tropical Island State and Territorial Issues. Consistent with Hawaii's FAP, reversing the trend of natural resource loss by increasing watershed protection, invasive species prevention and control, and restoration of native species has been identified as a target to be achieved by 2030 in the Aloha+ Challenge, a statewide commitment crossing jurisdictions, agencies, sectors, and communities to sustain resources. DOFAW, which manages a quarter of the land in Hawaii, continues to work with partners to enhance the resilience of the State's wildland and urban forests so they are capable of providing the public benefits and ecosystem services upon which our islands depend. Ultimately, forests play a large role in the health of Hawaii's economy, residents, and visitors.

Program Goals

- Protect and maintain forested watersheds for water recharge and other ecosystem services.
- Promote sustainable forest management to generate a variety of forest products and jobs.
- Preserve, enhance, and restore habitat necessary to sustain native species and ecosystems.
- Maintain public trails and access roads used for fishing, hiking, camping, and hunting.
- Enhance awareness of threats posed by invasive species and continue to collaborate with partners throughout the State and the Pacific islands region to prevent the spread of invasive species.
- Improve the health and viability of urban forests through educational programs, technical and financial assistance, and public/private partnerships.
- Train teachers in environmental education, offer youth internships, provide volunteer opportunities, and support green jobs.
- Purchase land and develop conservation easements to preserve and restore forested areas that are threatened by development or fragmentation.
- Provide technical and financial assistance to landowners and long-term leaseholders of privately
managed forests.
• Reduce the negative impacts of wildfires on native ecosystems, forests, and watersheds as well as communities and the threatened rare habitats near them.

Key Issues
• Respond to the detection of new fungus killing on of Hawaii's most important forest tree species, ohia, which makes up 50% of all of the forests in Hawaii. The disease, locally referred to Rapid Ohia Death, has affected an estimated 135,000 acres and threatens forest statewide. DOFAW is coordinating with other state, federal, and county agencies to effectively respond to this new disease threat.
• The sustainable yield of freshwater depends on the protection of forested watersheds throughout the State and continues to be a priority for forestry. The State of Hawaii has committed to protection of 30% of highest priority watersheds by 2030.
• Preventing and responding to new invasive species that threaten forests in Hawaii, while effectively managing widely established pest species through Integrated Pest Management.
• Fire-tolerant invasive grasses, periods of drought, and land use and population growth trends continue to be a concern for the Fire Management Program. Hawaii is on par with the western states for percentage of land area burned. Enhancing DOFAW's capacity to restore and maintain landscapes, support fire adapted communities, and respond to wildfires will depend largely on its ability to secure funds and strengthen collaborative partnerships across areas of expertise and jurisdictional boundaries.
• Climate change poses current and long-term threats to Hawaii's forests, as well as new opportunities to support large-scale reforestation for carbon sequestration. Threats include: (1) Regional Climate Assessments predict warmer and drier conditions will contribute to declining freshwater supplies and increase the risk of extinctions. (2) Nearly a third of the nation's listed species are found in Hawaii with habitat limited by temperature gradients; as areas warm species habitats may be lost.

Forest Facts and Accomplishments

<table>
<thead>
<tr>
<th>Selected Facts</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1,360,301</td>
</tr>
<tr>
<td>Acres of Forest Land</td>
<td>1,471,181</td>
</tr>
<tr>
<td>Acres of Nonindustrial Private Forest Land</td>
<td>1,155,000</td>
</tr>
<tr>
<td>Number of NIPF Landowners</td>
<td>25,000</td>
</tr>
<tr>
<td>Acres of Federal Land Under State Fire Protection</td>
<td>0</td>
</tr>
<tr>
<td>Acres of Private Land Under State Fire Protection</td>
<td>2,300,000</td>
</tr>
<tr>
<td>Number of Rural Fire Departments</td>
<td>4</td>
</tr>
<tr>
<td>Cities and Towns</td>
<td>5</td>
</tr>
<tr>
<td>Forest Based Employment</td>
<td>926</td>
</tr>
<tr>
<td>Economic Impact of Forestry (by rank)</td>
<td>19</td>
</tr>
<tr>
<td>State Forestry Budget (All Sources)</td>
<td>53,865,282</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FY 2019 Accomplishments</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowners Receiving Educational or Technical Assistance</td>
<td>75</td>
</tr>
<tr>
<td>Acres Covered by New or Revised Forest Stewardship Plans</td>
<td>1,862</td>
</tr>
<tr>
<td>Acres in Important Forest Resource Areas Covered by New or Revised Stewardship Plans</td>
<td>1,298</td>
</tr>
<tr>
<td>Volunteer Fire Departments Assisted</td>
<td>30</td>
</tr>
<tr>
<td>State Fire Communities Assisted</td>
<td>68</td>
</tr>
<tr>
<td>Coop Forest Health Acres Protected</td>
<td>0</td>
</tr>
<tr>
<td>Forest Legacy Project Acquisitions</td>
<td>2,823</td>
</tr>
<tr>
<td>Communities Provided Urban Forestry Program Assistance</td>
<td>70</td>
</tr>
<tr>
<td>Population Living in Communities</td>
<td>1,158,206</td>
</tr>
<tr>
<td>Provided Urban Forestry Program Assistance</td>
<td>2,835</td>
</tr>
<tr>
<td>Urban Forestry Volunteer Assistance</td>
<td>2,835</td>
</tr>
</tbody>
</table>

Program Highlights

Forest Health Protection
Rapid Ohia Death (ROD) continues to be the focus of the forest health program in Hawaii. The disease is caused by two recently described fungi in the Ceratocystis genus and threatens Hawaii's most important native tree species. The disease which has affected approximately 180,000 acres on Hawaii island was recently detected on the islands of Kauai, Maui and Oahu through early detection surveys. The State of
Hawaii's legislature appropriated $750,000 for research, survey, control, and outreach on ROD for state fiscal year 2020. Research efforts include determining how the pathogen spreads, the role of ambrosia beetles, genetic fingerprinting to track disease origin and spread, efficacy of treatments (e.g., felling and tarping), better detection tools, and genetic resistance.

The Division continues to work with biological control practitioners in the state to promote release of safe biological control for Hawaii's most damaging invasive species such as miconia, Christmas berry, cane tibouchina, and the erythrina gall wasp. These projects are currently undergoing environmental review and releases are expected in 2021. Biological control is the most cost-effective management solution to many of Hawaii's worst forest threats. In addition, initial planning efforts and strategy are underway to create new Pacific Regional Biocontrol Center in Hawaii with state-of-the-art facilities and staffing in order to meet the increasing demand for effective biological control.

Quarantine restrictions on live plant material from the Myrtaceae family at the state and federal level are in the process to protect ohia from future pest infestations, including additional strains of the rust disease, Austropuccinia psidii which as been present in Hawaii since 2005. This disease poses an additional threat to Hawaii's most important tree species and is considered one of the worst forest pests worldwide, moving around the globe with living plant material.

Forest Legacy
The purpose of the Hawaii Forest Legacy Program is to identify environmentally important forestlands and to protect them from conversion to non-forest uses. In doing so, the program facilitates the conservation and preservation of forest product resources, watersheds, wildlife, scenic enjoyment, recreation, cultural and native species resources, and other ecologically important values. DOFAW supports acquisition through the program for conservation purposes and/or sustainable management of forests with the support of land trust/non-profit partners. Specific Forest Legacy projects in Hawaii include assisting the Office of Hawaiian Affairs with the Wao Kele O Puna Forest Reserve (Hawaii Island); holding a conservation easement at Kealakekua Heritage Ranch and Kaawaloa Forest (Hawaii Island); providing monitoring support for U.S. Forest Service conservation easement projects in South Kona (Hawaii Island); and developing a community-based, multi-resource management plan for the recently acquired Helemano Wilderness Area (Oahu - 3,000 acres fee title). Due diligence for other pending program acquisitions is underway including Hoomau Ranch (Hawaii Island - 993 acres conservation easement), Haloa Aina (Hawaii Island - 2800 acres conservation easement) and Kamehamenui Forest (Maui - 3,000 acre fee title).

Forest Stewardship
The Forest Stewardship Program (FSP) enables private landowners or long-term leaseholders to restore, conserve, and responsibly manage important forest resources that provide vital public and private socioeconomic and environmental benefits. The majority of Hawaii's forests, 66% or 1,155,000 acres of Hawaii's 1,748,000 acres of forestland, is privately owned or managed. By establishing and maintaining the FSP, the State recognizes that public-private partnerships are essential to the present and future health of Hawaii's forests and to the public benefits that they provide. Since the program began in 1990, approximately 65 private landowners have enrolled in the FSP and are conducting forest management activities on over 36,000 acres under agreements spanning 10 or more years. The program provides cost-share assistance for the development of FSP management plans and FSP management plan implementation over the 10-year period, but some landowners commit to maintaining their projects for up to 20 additional years. In Hawaii, the FSP has leveraged over $12 million in state and private funding to support provided by U.S. Forest Service through the Cooperative Forestry Act over the last ten years.

Similar to a number of other states, DOFAW entered into a cooperative agreement in 2008 with the Natural Resource Conservation Service, Hawaii Association of Conservation Districts and the U.S. Forest Service to leverage partner resources and provide better service to Hawaii's forest and agricultural producers. Since signing this "Joint Forestry" agreement, FSP in Hawaii has increased program participation by more than 80% and is managing a growing list of approximately 135 people that have expressed interest in the program. The Division, through its landowner assistance network, reached over 50 landowners and community groups in the past year, providing them with technical guidance on responsible stewardship of their forest resources.

Urban and Community Forestry
The urban and community forestry program awarded community cost-share grants to eighteen exciting projects directly responding to priorities in the State Forest Action Plan. Three grantees received funding for projects focused on Arbor Day Hawai‘i, an annual, state-wide event held on the first Saturday in November. Arbor Day Hawai‘i events provide educational and outreach opportunities as well as free trees and plants to communities across the state. This year events were held at seven locations on three islands: O‘ahu, Maui, and Kaua‘i.

Foster Botanical Gardens, one of five municipal botanical gardens on O‘ahu, hosted its second annual Arbor Day celebration and tree give away. Over 1,000 people attended the event, and fifteen partner organizations offered informational booths, workshops, and demonstrations. These included the University of Hawai‘i Master Gardeners who offered their expertise about tropical gardening and plant care, and Certified Arborists from Aloha Arborist Association who demonstrated proper tree planting, tree care, and the importance of planting the right tree in the right place. Community organizations, such as Blue Zones Project and ʻōhiʻa Legacy Project, offered workshops and educational opportunities on topics such as forest bathing and growing our native ʻōhiʻa (Metrosideros polymorpha). Arbor Day Hawai‘i continues to be a popular volunteer opportunity for supporters of the urban forest with each site attracting more than enough volunteer support, a demonstration of how loved these events are to community members and tree advocates. At Foster Botanical Gardens alone, volunteers provided more than 150 hours, and throughout the state, volunteers contributed over 1,000 hours helping to increase community awareness on the value trees and how to care for them.

Contact Information

<table>
<thead>
<tr>
<th>Hawaii Division of Forestry &amp; Wildlife</th>
<th>US Forest Service Pacific Southwest Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>David G Smith</td>
<td>Kathleen Stearns Friday</td>
</tr>
<tr>
<td>State Forester</td>
<td>Forest Legacy/Stewardship Program Manager</td>
</tr>
<tr>
<td>1151 Punchbowl Street, Room 325</td>
<td>USDA Forest Service</td>
</tr>
<tr>
<td>Honolulu, HI 96813</td>
<td>1323 Club Drive</td>
</tr>
<tr>
<td>808-587-0166</td>
<td>Vallejo, CA 94592</td>
</tr>
<tr>
<td><a href="mailto:David.G.Smith@hawaii.gov">David.G.Smith@hawaii.gov</a></td>
<td>808-854-2620</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:kathleen.friday@usda.gov">kathleen.friday@usda.gov</a></td>
</tr>
</tbody>
</table>